THE AGARICACEAE OF THE PACIFIC COAST—IV. NEW SPECIES OF CLITOCYBE AND MELANOLEUCA

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Both of these genera are large and difficult, the former being characterized by decurrent or adnate gills and the latter by sinuate or adnexed gills. *Tricholoma* (Fries) Quél. is antedated by *Tricholoma* Benth., so *Melanoleuca* Pat. must be substituted for this familiar name; but combinations with *Tricholoma* are made for those desiring to continue its use.

Clitocybe albicastanea sp. nov.

Pileus convex, gibbous, at length expanded, gregarious or growing in incomplete fairy rings, 1.5–4 cm. broad; surface white, smooth, glabrous, moist, margin entire, concolorous; context thick at the center, very thin near the margin, white, without characteristic taste or odor; lamellae narrow, distant, slightly arcuate, decurrent, white, bay to dark-chestnut in dried specimens; spores ellipsoid, smooth, hyaline, 7–8.5 × 4–5.5 μ; stipe cylindric, equal, smooth, white, glabrous, solid, 3.5–5 cm. long, 3–7 mm. thick.

Type collected among leaves under oaks near Searsville Lake, California, December 28, 1902, *James McMurphy 61*.

Clitocybe albiformis sp. nov.

Pileus thick, firm, convex, cespitose, 5–9 cm. broad; surface nearly smooth, dry, glabrous, white, slightly cremeous at the center, margin entire, concolorous, strongly inflexed on drying; context thick, white, with the odor and taste of the ordinary field mushroom; lamellae distinctly decurrent, rather broad and close, several times inserted, plane or arcuate; spores globose, smooth, hyaline, 2–3 μ; stipe cylindric to ventricose, tapering upward at times, white, solid, slightly fibrillose below, finely tomentose above, 9–16 cm. long, 1–2.5 cm. thick.

Type collected in humus under redwoods near Searsville Lake, California, January 6, 1903, *James McMurphy 3*. This species

strongly suggests *Tricholoma album,* hence the specific name selected for it.

Clitocybe atrialba sp. nov.

Pileus convex to slightly depressed and at length infundibuliform, regular in outline, solitary or gregarious, reaching 6 cm. broad; surface at first smooth, glabrous, dry, fuliginous-ater, becoming finely imbricate from the breaking up of the cuticle; margin entire, concolorous, strongly inflexed on drying; context thin, white, tough, with mild flavor; lamellae decurrent, not crowded, white, becoming grayish-discolored; spores globose to subglobose, smooth, hyaline, granular, 8.5–10 × 7–8 μ; stipe equal or slightly tapering upward, flattened or twisted at times, dry, furfuraceous or finely scabrous, avellaneous, hollow, with rather tough rind, 5–10 cm. long, 6–10 mm. thick.

Type collected on decayed buried wood in the woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 259.* Also collected in the same locality, *W. A. Murrill 249,* and on decayed buried wood at La Honda, near Palo Alto, California, November 25, 1911, *W. A. Murrill & L. R. Abrams 1263.* This species is rather tough for *Clitocybe,* somewhat resembling *Collybia platyphylla.* It is characterized by its dark-brown cap, white gills, and concolorous, furfuraceous stipe. The spores are also very characteristic in size and appearance.

Clitocybe avellaneialba sp. nov.

Pileus large, thin, slightly umbonate, becoming infundibuliform, gregarious to cespitose, reaching 10 cm. or more broad; surface hygrophanous, avellaneous to dark-fuliginous, subzonate, innate-radiate-fibrillose, hispid-fibrillose in the center, margin entire, concolorous; context thin, white, of mild flavor; lamellae short-decurrent, rather close and narrow, white; spores globose, smooth hyaline, 7–8 × 5 μ; stipe tapering upward, whitish-mycelioid at the base, avellaneous, finely fibrillose to glabrous, solid or hollow with a tough rind, reaching 10 or more cm. long and 1 cm. thick.

Type collected in humus on the ground in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 526.* Also collected in humus under a log in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 293;* and among leaves and sticks under redwoods near Searsville Lake, California, January 6, 1903, *James McMurphy 2.* This species

resembles *C. atrialba* and, like that species, reminds one of *Collybia platyphylla*. It is characterized by its innate-fibrillose, avellaneous cap and glabrous or finely fibrillose stem.

Clitocybe brunnescens sp. nov.

Pileus rather thin, slightly depressed, rarely infundibuliform, reaching 4 cm. broad; surface slightly viscid when moist, smooth, glabrous, dull-avellaneous, margin entire, concolorous; context thin, whitish, with strongly farinaceous odor; lamellae decurrent, subcrowded, narrow, dull-avellaneous, becoming dark-fuliginous, especially on the edges; spores globose, smooth, hyaline, 3–3.5 μ; stipe subequal, smooth, glabrous, concolorous above, whitish-tomentose below, stuffed or hollow, 3–4 cm. long, 4–7 mm. thick.

Type collected among sticks in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 699*. This species is similar in form and color to *C. cyathiformis,* but differs decidedly in its spore characters, as well as in other important ways.

Clitocybe cuticolor sp. nov.

Pileus convex to subplane, thin, 3 cm. broad; surface smooth, glabrous, hygrophanous, dull-rosy-isabelline with a fulvous tint, margin entire, concolorous, incurved on drying; lamellae adnate, close, nearly plane, narrow, dull-rosy-isabelline; spores broadly ellipsoid, smooth, hyaline, about 4.5 × 3.5 μ; stipe eccentric, tapering upward from a bulbous base, fleshy, solid or stuffed, smooth, glabrous, rosy-isabelline, 4 cm. long, 7 mm. thick.

Type collected on the ground in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 532*. This species is colored throughout very much like the skin on the back of a man's hand. Its affinities are with *Tricholoma,* reminding one of *Tricholoma nudum,* but the gills are distinctly adnate, not at all sinuate.

Clitocybe griseifolia sp. nov.

Pileus large, fleshy, convex to expanded or slightly depressed, usually solitary, reaching 9 cm. broad; surface slightly viscid when moist, smooth, glabrous, grayish-white, avellaneous, tinted with brownish-avellaneous at the center, margin thin, somewhat lobed, slightly paler, strongly incurved on drying; context white, fragrant; lamellae rather broad and close, short-decurrent or

rarely adnate, grayish to dirty-white; spores ellipsoid, smooth, hyaline, 5–6 × 3–3.5 μ; stipe bulbous, tapering upward, smooth, glabrous, stuffed, white, 6–9 cm. long, about 1 cm. thick, 2 cm. or more thick at the base.

Type collected in humus in the woods near Seattle, Washington, October 1, 1911, *W. A. Murrill 276.* Also collected in humus in woods at Newport, Oregon, November 13, 1911, *W. A. Murrill 1088,* and on the ground at Mill Valley, Marin County, California, December 28, 1902, *Alice Eastwood 24.*

Clitocybe Harperi sp. nov.

Pileus convex to plane, subcespitose, reaching 8–10 cm. broad; surface dry, smooth, glabrous, cinereous to pale-murinous, margin entire, concolorous, inrolled; context white, taste mild; lamellae short-decurrent, of medium distance, narrow, slightly arcuate or plane, several times inserted, cinereous, sometimes with a greenish tint; spores ovoid, smooth, hyaline, 3.5–5 × 2–3.5 μ; stipe bulbous, whitish-mycelioid at the base, concolorous, pruinose, hollow, 3–7 cm. long, 1–3 cm. thick.

Type collected in Golden Gate Park, San Francisco, California, February 22, 1911, *R. A. Harper 57.* Young specimens with undeveloped spores collected in the Santa Cruz Mountains, December, 1895, *W. R. Dudley 102,* appear to belong to this category. What appears to be the same species was collected on the ground in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 637,* but the cap is avellaneous and the gills crowded and without a greenish tint. The species is similar to specimens of *T. maculatescens* Peck collected in Ohio by Morgan, but the gills are decidedly sinuate in that species and become spotted with age.

Clitocybe hondensis sp. nov.

Pileus convex, gibbous, solitary, 3 cm. broad; surface dry or moist, smooth, glabrous, subfulvous, minutely radiate-lineate, margin thin, entire, paler; lamellae decurrent, arcuate, many times inserted, close, pallid; spores ellipsoid, smooth, hyaline, 5.5 × 3.5 μ; stipe equal, crooked, whitish, smooth, glabrous, hollow, 6 cm. long, 6 mm. thick.

Type collected in rich soil under redwoods at La Honda, near

Palo Alto, California, November 25, 1911, *W. A. Murrill & L. R. Abrams 1274.*

Clitocybe murinifolia sp. nov.

Pileus convex to slightly depressed, rather thin, solitary, about 2 cm. broad; surface smooth, glabrous, smoky-brown, margin thin, slightly lobed, concolorous, inflexed on drying, pruinose when young; lamellae short-decurrent, not crowded, rather narrow, murinous; spores globose, smooth, hyaline, 2–3 μ; stipe fleshy, slightly tapering upward, smooth, glabrous, murinous, solid, whitish-tomentose at the base, 2 cm. long, 7–9 mm. thick.

Type collected on humus in the woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 300*[a].

Clitocybe oculata sp. nov.

Pileus convex to plane, slightly depressed at the center, thin, solitary, reaching 4.5 cm. broad; surface dry, smooth, finely furfuraceous, avellaneous, fuliginous at the center, margin very thin, entire, even, concolorous; lamellae short-decurrent, distant, white; spores broadly ovoid, smooth, hyaline, granular, 9–12 × 7–8 μ; stipe equal, twisted, hollow, with a tough rind, furfuraceous, whitish with a pale-avellaneous tint, 6 cm. long, 5 mm. thick.

Type collected in low woods, probably attached to buried wood, at Mill City, Oregon, November 9, 1911, *W. A. Murrill 835.* The stipe of this species is rather tough for *Clitocybe.* The species is characterized by its coloring, its furfuraceous surface, and its unusually large spores.

Clitocybe oreades sp. nov.

Pileus large, fleshy, convex, becoming plane or slightly depressed with age, usually growing in circles, 6–10 cm. broad, very thick at the center; surface smooth, somewhat viscid when moist, glabrous, shining, cinereous to murinous, sometimes covered with a whitish mold, margin entire, concolorous, deflexed when young, at times becoming upturned and more or less split with age; context thick, white, with an agreeable but not characteristic taste and odor; lamellae short-decurrent, varying to adnate, especially when young, close, narrow, arcuate, white or pale-yellowish-white; spores ellipsoid, smooth, hyaline, 6–8 × 2–4 μ; stipe very large, enlarged or bulbous below, fleshy, white or slightly cinereous, smooth, minutely tomentose or fibrillose above, solid, 10–15 cm. long, 1.5–2.5 cm. thick, reaching 4 cm. or more at the base.

Type collected in humus under redwoods near Searsville Lake, California, December 11, 1911, *James McMurphy 91.* Also collected in a similar habitat near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 280;* near Seattle, Washington, 1912, *S. M. Zeller 99, 123;* near Salem, Oregon, January, 1911, *Morton E. Peck;* in Marin County, California, December 21, 1902, *Alice Eastwood 36;* at La Honda, California, November 22, 1902, *L. R. Abrams 1.* This large and handsome species grows in conspicuous fairy rings. As the above collections indicate, it is quite widely distributed on the Pacific Coast.

Clitocybe oregonensis sp. nov.

Pileus umbilicate to infundibuliform, rather thin, solitary, reaching 4 cm. broad; surface smooth, glabrous, hygrophanous, pale-isabelline, margin thin, entire, concolorous; lamellae short-decurrent, subdistant, narrow, arcuate, discolored on drying; spores ellipsoid, smooth, hyaline, $8.5 \times 7\,\mu$; stipe fleshy, tapering upward, smooth, glabrous, concolorous, 5 cm. long, 5 mm. thick.

Type collected on the ground in mixed woods at Mill City, Oregon, November 9, 1911, *W. A. Murrill 865.* Also collected in mixed woods near Corvallis, Oregon, November 6–11, 1911, *W. A. Murrill 989.*

Clitocybe Peckii sp. nov.

Pileus irregular in outline, umbilicate to depressed, rather deeply depressed on drying, gregarious, reaching 5 cm. broad; surface hygrophanous, smooth, glabrous, grayish-stramineous, faintly radiate-striate on drying, margin thin, somewhat lobed, concolorous, becoming upturned; lamellae discolored, rather close, short-decurrent; spores ovoid, smooth, hyaline, $5–6 \times 2–3\,\mu$ stipe slightly tapering upward, concolorous, smooth, glabrous, hollow or stuffed, reaching 4 cm. long and 7 mm. thick.

Type collected in soil near Salem, Oregon, January, 1911, *Morton E. Peck 20.*

Clitocybe stipitata sp. nov.

Pileus large, fleshy, convex to nearly plane, gregarious, 8–10 cm. broad; surface smooth, glabrous, slightly viscid when moist, white, becoming cream-colored on drying, margin entire or slightly

lobed, rather thick and fleshy, concolorous; lamellae broad, crowded, decurrent, white; spores globose, smooth, hyaline, 4–6 μ; stipe equal, very long, crooked, smooth, subglabrous, whitish-mycelioid below, white, becoming reddish-brown in some specimens on drying, solid or spongy within, 15 or more cm. long, about 1.5 cm. thick.

Type collected among leaves in woods at Stanford University, California, in 1907, *Miss A. M. Patterson.* There are no notes accompanying this collection and the above description is drawn from the dried specimens.

Clitocybe subcandicans sp. nov.

Pileus convex to plane, rather thin, solitary, reaching 6 cm. broad; surface stramineous, smooth, glabrous, hygrophanous, margin white; lamellae decurrent, arcuate, close; spores globose or subglobose, smooth, hyaline, 6–7 μ; stipe cylindric, equal, concolorous, subfleshy, hollow, 6 cm. long, 5–7 mm. thick.

Type collected on the ground among fallen twigs in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 230.*

Clitocybe subinversa sp. nov.

Pileus convex, slightly depressed, rather thin, gregarious, 3–5 cm. broad; surface smooth, moist, glabrous, very light-brown, fulvous when dry, margin thin, incurved, entire, somewhat irregular, concolorous; context cream-colored, without characteristic taste or odor; lamellae decurrent, close, narrow, arcuate, many times inserted, rather firm, white; spores globose or subglobose, smooth, hyaline, 3–4.5 μ; stipe cylindric, equal, somewhat crooked, tomentose or fibrillose, subglabrous, paler than the pileus, hollow, 3–7 cm. long, 3–6 mm. thick.

Type collected in humus under redwoods at Portola, California, January 4, 1903, *James McMurphy 50.* Specimens collected at Salem, Oregon, January, 1911, by Morton E. Peck agree fairly well with this species but also closely resemble *C. sinopica.* No notes accompany the specimens.

Clitocybe subfumosipes sp. nov.

Pileus small, rather thin, convex to plane, gregarious to subcespitose, 2.5 cm. broad; surface white, smooth, glabrous, shin-

ing, avellaneous on the small umbo, margin entire, concolorous, inflexed on drying; lamellae decurrent, rather broad and distant, white, becoming discolored on drying; spores ellipsoid, smooth, hyaline, 5–6 × 2.5–3.5 μ; stipe equal, smooth, pruinose, especially above, white changing to pale-fumosus on drying, hollow, 3–4 cm. long, 2–3 mm. thick.

Type collected in humus in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 316.*

Clitocybe variabilis sp. nov.

Pileus fleshy but rather thin, plane or slightly depressed, rarely umbonate when young, gregarious, reaching 6 cm. broad; surface dry, smooth, glabrous, white, margin thin, usually entire, concolorous; lamellae narrow, usually more or less crowded, decurrent, white; spores ovoid, smooth, hyaline, uninucleate, about 6 × 4 μ; stipe tapering upward from a thickened base, smooth, glabrous, white, whitish-mycelioid at the base, hollow, reaching 6 cm. broad and 8 mm. thick, scarcely 3 cm. long in one collection.

Type collected in humus in woods, near Mill City, Oregon, November 9, 1911, *W. A. Murrill 797.* Also collected on the ground in fir forests near Corvallis, Oregon, *November* 6–11, 1911, *W. A. Murrill 897,* and in a similar locality near Salem, Oregon, January, 1911, *Morton E. Peck.* This species varies greatly in the length of the stipe and the closeness of the gills. The specimens collected near Corvallis differ so greatly from the types in these two characters as to constitute a distinct variety, which may be called *Clitocybe variabilis brevipes.*

Clitocybe violaceifolia sp. nov.

Pileus convex, somewhat gibbous, solitary, 3 cm. broad; surface slightly viscid when moist, smooth, glabrous, grayish-violet tinted with brown at the center, margin entire, slightly paler; lamellae very narrow, adnexed to slightly decurrent, rather crowded, arcuate, pale-violet; spores ellipsoid, smooth, hyaline, 7–8 × 3.5–4.5 μ; stipe equal, fleshy, solid, smooth, glabrous, grayish-violet, mycelioid at the base, 3 cm. long, 6 mm. thick.

Type collected on decaying wood near Salem, Oregon, January, 1911, *Morton E. Peck.*

Clitocybe washingtonensis sp. nov.

Pileus fleshy, convex to plane or very slightly depressed, usually gibbous, gregarious, reaching 5–6 cm. broad; surface white, smooth, glabrous, dry, somewhat shining, margin entire, concolorous; lamellae decurrent, distant, rather narrow, white to slightly discolored; spores ovoid, smooth, hyaline, 7–8 × 3–4 μ; stipe subequal, fleshy, solid or stuffed, smooth, glabrous, whitish-mycelioid at the base, 3.5–5 cm. long, 5–8 mm. thick.

Type collected in humus in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 615*[a].

Melanoleuca anomala sp. nov.

Pileus very small, plane, solitary, 2 cm. broad; surface ferruginous, dry, decorated with dense, minute fascicles of hairs, margin entire, concolorous or slightly paler; lamellae adnate to slightly sinuate, broad, not crowded, ventricose, white, becoming latericious when bruised; spores ellipsoid, smooth, hyaline, 5–6 × 3–4 μ; stipe cylindric, equal, fragile, smooth, glabrous above, fibrillose below, isabelline, solid or stuffed, 3.5 cm. long, 3 mm. thick.

Type collected in soil under redwoods at Preston's Ravine, near Palo Alto, California, November 25, 1911, *W. A. Murrill & L. R. Abrams 1198*. This species is quite different from other members of this group, its appearance indicating ferruginous rather than hyaline spores.

Melanoleuca arenicola sp. nov.

Pileus convex to subexpanded, umbonate, terraced, reaching 10–12 cm. broad; surface smooth, glabrous, ferruginous, apparently viscid when fresh, bringing up adhering particles of sand; context mild to the taste, but with a strong, unpleasant odor; lamellae sinuate, ventricose, crowded, pallid, becoming discolored with subferruginous blotches; spores globose or subglobose, smooth, hyaline, with granular contents, about 4 μ; stipe long, slightly attenuate downward, fleshy, white, glabrous, except for a few fibrils where the margin of the pileus rested against the stipe, reaching 10 cm. long, and 2 cm. thick.

Type collected in deep, pure sand in pine barrens at Newport, Oregon, November 13, 1911, *W. A. Murrill 1035*.

Melanoleuca avellanea sp. nov.

Pileus convex, becoming plane, thick, fleshy, solitary, reaching 8 cm. broad; surface dry, smooth, glabrous, avellaneous, margin entire, concolorous, inflexed on drying; lamellae slightly sinuate varying to adnate, close, narrow, arcuate, pure-white changing to yellowish on drying; spores ellipsoid, smooth, hyaline, about $7 \times 3\,\mu$; stipe much enlarged at the base, rather short, fleshy, solid, white, smooth, slightly scabrous above, about 7 cm. long and 2 cm. thick, reaching 4 cm. thick at the base.

Type collected in sandy soil mixed with humus, in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 267*. Also collected on decayed wood in the same locality, *W. A. Murrill 274*.

Melanoleuca avellaneifolia sp. nov.

Pileus fleshy, rather thick, convex to expanded, gibbous, subcespitose, reaching 9 cm. broad; surface polished, smooth, somewhat viscid, dull-blackish-fuliginous, margin entire, concolorous, inflexed on drying; lamellae sinuate, ventricose, several times inserted, not crowded, pale-avellaneous; spores subglobose, smooth, hyaline, granular, about 5.5–6.5 μ; stipe equal, fleshy, solid, smooth, glabrous, pure-white, about 8 cm. long, 1.5 cm. thick.

Type collected in soil in woods at Mill City, Oregon, November 9, 1911, *W. A. Murrill 841*. Several plants were found, but only one was saved, owing to the bad weather.

Melanoleuca bicolor sp. nov.

Pileus very firm, convex to nearly plane, somewhat gibbous, about 6 cm. broad; surface dry, smooth, glabrous, avellaneous with a rosy tint, margin concolorous or slightly paler, often splitting; lamellae broad, rather close, emarginate with a slight decurrent tooth, firm, drying readily, white; spores subglobose, smooth, hyaline, 6–7 μ; stipe equal or somewhat enlarged below, white, smooth, minutely tomentose to glabrous, solid, 5–6 cm. long, about 1 cm. thick.

Type collected in humus in woods at Glen Brook, Oregon, November 7, 1911, *W. A. Murrill 745*. What appears to be the same species was collected on the ground under an oak at Mission Cañon, California, spring of 1913, *O. M. Oleson 113a*. These

latter specimens are very much larger than the types, measuring in the dry state as much as 10 cm. broad with a bulbous stipe reaching 6 cm. long and 3.5 cm. thick. The color is also much darker and is recorded by the collector as brown. The margin in the dried specimens is quite conspicuously striate. The typical specimens are very closely related to *Melanoleuca roseibrunnea,* but differ in color and in the shape and closeness of the gills.

Melanoleuca californica sp. nov.

Pileus convex to subplane, rather thick at the center, gregarious, reaching 15 cm. broad; surface smooth, glabrous, evidently viscid when fresh, bringing up adhering particles of soil, reddish-brown at the center, much lighter-colored at the margin, which is thin, entire and inflexed on drying; context white, rather thick at the center, thinning out toward the margin, slightly bitter to the taste, odor musty; lamellae quite narrow, less than the thickness of the context, sinuate to adnexed, plane, crowded, white, scarcely changing color on drying; spores broadly ellipsoid, smooth, hyaline, $5–7 \times 4–5\,\mu$; stipe very long, subequal, smooth, glabrous, white, solid, 10–15 cm. long, reaching 3 cm. thick.

Type collected under oaks on Jasper Ridge near Stanford University, January 11, 1911, *James McMurphy 125.* This large and handsome species resembles specimens determined as *Armillaria subannulata* Peck sent to Albany from Claremont, California, by Baker. Specimens collected by Oleson at Santa Barbara, California, apparently belong to this category, but they are rather poorly preserved and are not accompanied by notes.

Melanoleuca collybiiformis sp. nov.

Pileus broad, thin, convex to plane, drying easily like species of *Collybia,* gibbous, reaching 10 cm. broad; surface dry, smooth, glabrous, fulvous at the center, pale-fulvous near the entire, smooth margin; lamellae rather crowded, white, sinuate, the edges undulate or somewhat notched; spores globose or subglobose, smooth, hyaline, conspicuously granular within, about $3.5\,\mu$; stipe eccentric, bulbous, rather broad, fleshy, hollow, white, radicate, 6 cm. long, 1–2 cm. thick.

Type collected in humus in a grove at Woodland Park, Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 322.*

This species is closely related to some species of *Collybia*. The eccentric position of the stipe was doubtless due to the peculiar situation in which the plant grew.

Melanoleuca dryophila sp. nov.

Pileus convex, gibbous, becoming almost expanded, scattered, 3–10 cm. broad; surface glabrous, viscid when fresh, subshining, nearly smooth, whitish, stained with rusty-brown, margin paler, somewhat lobed or irregular; context white, with farinaceous taste and odor; lamellae deeply sinuate to adnexed, close, narrow, plane, white, scarcely changing on drying; spores globose, smooth, hyaline, 5–8 μ; stipe cylindric or slightly flattened, scarcely enlarged below, glabrous, nearly smooth, whitish or brownish, solid, 6–8 cm. long, 1–3 cm. thick.

Type collected in soil under live oaks at Stanford University, California, January 21, 1903, *James McMurphy 27*. This species somewhat resembles M. *subpessundata,* but differs in several important characters.

Melanoleuca farinacea sp. nov.

Pileus rather thin but fleshy, convex to expanded, umbonate, gregarious to subcespitose, reaching 8 cm. broad; surface white, smooth, glabrous, margin entire, concolorous; context white, with strong farinaceous odor; lamellae sinuate, broad, several times inserted, not crowded, ventricose, white; spores globose, smooth, hyaline, 4.5–6.5 μ; stipe bulbous and whitish-mycelioid at the base, white, subglabrous, smooth, stuffed or hollow, fleshy, 5–6 cm. long, 5–10 mm. thick.

Type collected in humus in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 644*.

Melanoleuca Harperi sp. nov.

Pileus broad, rather thin, becoming plane or depressed, gregarious or growing in circles, reaching 10–15 cm. broad; surface umbrinous, hygrophanous, not viscid, smooth, glabrous, margin entire or slightly lobed, concolorous; lamellae sinuate, white, not spotted, crowded, rather broad, ventricose, usually separating from the stipe with age; spores broadly ellipsoid, smooth, hyaline, 7–8 $\times$ 4 μ; stipe very short and thick, bulbous, solid, smooth, glabrous, white, about 3–4 cm. long, and 2–3.5 cm. thick.

Type collected in rich soil at Berkeley, California, January 31, 1911, *R. A. Harper 12.* Also collected by Harper in the same locality on February 6, 1911, and February 14, 1911. The species was found on one occasion growing in a fairy ring.

Melanoleuca nuciolens sp. nov.

Pileus convex to nearly plane, often becoming depressed and irregular with age, gregarious, subcespitose, reaching 6 cm. broad; surface glabrous, rather uneven, hygrophanous, pale-rosy-isabelline, margin concolorous, undulate to conspicuously lobed and upturned with age; context white, thin, having the odor of walnuts in dried specimens; lamellae sinuate varying to adnate, narrow, arcuate, rather distant, pale-rosy-isabelline, becoming slightly purplish-spotted when bruised or on drying; spores ellipsoid, smooth, hyaline, $6 \times 3.5\,\mu$; stipe equal or slightly tapering upward, sometimes distorted in old specimens, smooth, glabrous, pallid, hollow, almost cartilaginous, about 5–6 cm. long, 1–1.5 cm. thick.

Type collected in sandy soil in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 658.*

Melanoleuca Olesonii sp. nov.

Pileus convex to plane, large, rather thick at the center, fleshy, gregarious, reaching about 14 cm. broad; surface pure-white, smooth, glabrous, moist, margin thin, entire or slightly lobed, concolorous, not inflexed on drying; lamellae broad, ventricose, crowded, sinuate, white becoming discolored on drying; spores ellipsoid, smooth, hyaline, $7–9 \times 4–5\,\mu$; stipe short, thick, equal or slightly bulbous, smooth, glabrous, white, solid, about 4–5 cm. long and 2–3 cm. thick.

Type collected on the ground under an oak at Mission Cañon near Santa Barbara, California, spring of 1913, *O. M. Oleson 100.* Also collected February 17, 1894, *M. T. Cook 8.* The above description is drawn from dried specimens.

Melanoleuca oreades sp. nov.

Pileus becoming broadly convex or plane to somewhat depressed, large, fleshy, growing in circles, subcespitose at times, reaching 15 cm. broad; surface dry, smooth, slightly silky-striate, pale-avellaneous; context with an agreeable, nutty flavor and an

odor somewhat suggestive of skunk cabbage; lamellae slightly sinuate, crowded, narrow, white, discolored on drying; spores globose, smooth, hyaline, 4–6 μ; stipe cylindric, solid, fleshy, white or pale-avellaneous, 5–8 cm. long, 1–1.5 cm. thick.

Type collected in the edge of woods on the border of a lake near Tacoma, Washington, October 26, 1911, *W. A. Murrill 732.* Seventy-seven plants of this species were found growing there in a perfect circle thirty feet in diameter.

Melanoleuca pinicola sp. nov.

Pileus rather thin, convex, umbonate, becoming nearly plane, gregarious, reaching 5 cm. broad; surface smooth, glabrous, subshining, dry or slightly moist, milk-white, margin entire, concolorous, strongly inflexed on drying; lamellae sinuate, not crowded, rather broad, plane or slightly ventricose, white or slightly discolored; spores ellipsoid, smooth, hyaline, 5–6 $\times$ 3–4 μ; stipe slightly tapering upward, fleshy, solid or stuffed, milk-white, smooth, glabrous, whitish-mycelioid at the base, 5–7 cm. long, 4–9 mm. thick.

Type collected on much decayed, coniferous wood near Tacoma, Washington, October 20–November 1, 1911, *W. A. Murrill 730.*

Melanoleuca platyphylla sp. nov.

Pileus convex to slightly depressed, rather thick, solitary, 3.5 cm. broad; surface smooth, subglabrous, white with a cremeous tint, margin entire, concolorous; lamellae white, subdistant, ventricose, very broad; spores ellipsoid, smooth, hyaline, granular, 8.5 $\times$ 6 μ; stipe tapering upward from a swollen base, pure-white, smooth, glabrous, 8 cm. long, 5–9 mm. thick.

Type collected in humus in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 419.*

Melanoleuca portolensis sp. nov.

Pileus rather thick, convex with a prominent umbo, becoming nearly plane, scattered, 6–11 cm. broad; surface smooth, moist, glabrous, brownish-gray, darker toward the center, margin entire, concolorous; context white, with a slightly nutty taste but without characteristic odor; lamellae rather narrow, slightly sinuate, plane, several times inserted, crowded, white; spores ovoid

smooth, hyaline, 5–7 × 2.5–3.5 μ; stipe tapering upward from an enlarged base, nearly white, smooth above, somewhat roughened below, glabrous, solid, 6–8 cm. long, 1.5–2 cm. thick; veil rudimentary, leaving a trace upon the stipe.

Type collected on the ground under redwoods at Portola, California, January 4, 1903, *James McMurphy 23*. This species resembles *M. dryophila,* but differs in habitat, coloring, and spore characters.

Melanoleuca roseibrunnea sp. nov.

Pileus convex to somewhat depressed, gregarious, reaching 8–10 cm. broad; surface smooth, dry, glabrous, brownish-pink with browner circular spots, margin paler with a cremeous tint, somewhat irregular, and often upturned with age; context white, odor farinaceous, taste farinaceous with a faint bitter flavor which gradually becomes stronger, eaten by slugs; lamellae sinuate with a decurrent tooth, very close, several times inserted, white; spores subglobose to ovoid, smooth, hyaline, 5–7 × 4–5 μ; stipe cylindric, equal or at times enlarged at the base, smooth, finely tomentose to subglabrous, white or whitish, solid, 6–8 cm. long, 1–1.5 cm. thick, usually thicker at the base.

Type collected among humus on the ground in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 375*. Also collected in a similar habitat near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 237, S. M. Zeller 81;* near Corvallis, Oregon, November 6–11, 1911, *W. A. Murrill 894;* near Stanford University, California, January 4, 1903, *James McMurphy 24;* and at Pasadena, California, December 22, 1895, *A. J. McClatchie 1018*. This species is closely allied to *Tricholoma album,* but differs decidedly in color.

Melanoleuca rudericola sp. nov.

Pileus rather thin, broad, somewhat irregular, convex to plane, scattered, 10–14 cm. broad; surface smooth, glabrous, slightly moist light-buff, margin thin, entire to lobed, concolorous; context white, without characteristic odor or taste; lamellae sinuate, narrow, subcrowded, many times inserted, white; spores ellipsoid, smooth, hyaline, 5–7 × 2.5–4.5 μ; stipe cylindric, equal, scarcely enlarged at the base, grayish-white with a tinge of purple, smooth, glabrous, solid, 5–10 cm. long, 1–1.5 cm. thick.

Type collected in rich ground by a heap of rubbish at Madera Creek, California, December 21, 1902, *James McMurphy 18*.

Melanoleuca secedifolia sp. nov.

Pileus thick, fleshy, convex, not fully expanding, solitary, reaching 9 cm. broad; surface smooth, glabrous, somewhat viscid when young, pure-white, subshining, margin entire, concolorous, inflexed on drying; lamellae broad, crowded, slightly sinuate, ventricose, becoming widely separated from the stipe, white changing to dull-brownish on drying; spores subglobose, smooth, hyaline, 5–6 μ; stipe equal, much enlarged at the base, white, smooth, glabrous, solid or stuffed, 8 cm. long, 2.5 cm. thick, about 4 cm. at the base.

Type collected on the ground near Salem, Oregon, January, 1911, *Morton E. Peck 34.*

Melanoleuca striatella sp. nov.

Pileus convex and gibbous when young, becoming depressed with age, firm, fleshy, scattered, 5–7.5 cm. broad; surface smooth, subglabrous, pale-mouse-gray, very minutely striate except at the center, margin quite thick, entire, concolorous; context grayish-white with farinaceous taste, quite thick at the center, but very thin toward the margin; lamellae sinuate to adnexed, broad, plane or ventricose, close, white; spores globose, smooth, hyaline, 5–7 μ; stipe cylindric or slightly compressed, equal, longitudinally striate, whitish, solid, 3–6 cm. long, 1–2 cm. thick.

Type collected on the ground under live oaks at Stanford University, California, January, 1903, *James McMurphy 29.*

Melanoleuca sublurida sp. nov.

Pileus firm, conic to convex with prominent umbo, solitary, 7 cm. broad; surface smooth, minutely squamulose, whitish with a caesious tint, the center black, smooth, and shining, margin entire or slightly undulate, white, deflexed on drying; lamellae sinuate, plane, broad, whitish, distant; spores subglobose, smooth, hyaline, 3–4 μ; stipe subequal, dry, white with grayish, farinaceous scales, solid, about 6 cm. long, and 1.5 cm. thick.

Type collected in soil in woods at Glen Brook, Oregon, November 7, 1911, *W. A. Murrill 751.* This species is very similar to specimens of *T. luridum* sent from Sweden by Romell.

Melanoleuca submulticeps sp. nov.

Pileus large, fleshy, convex to plane, becoming depressed with age, densely cespitose, reaching 10–12 cm. broad; surface smooth,

glabrous, hygrophanous, white, margin entire, concolorous; lamellae sinuate, rather crowded, plane, pure-white; spores globose, smooth, hyaline, granular, 7–8 μ, rarely reaching 10 μ; stipe white, hygrophanous, smooth, glabrous, hollow, ventricose or enlarged below, 6–10 cm. long, reaching 3 cm. thick.

Type collected on the ground in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 659*.

Melanoleuca subpessundata sp. nov.

Pileus becoming plane or slightly depressed, usually with a conic or rounded umbo, gregarious, reaching 6.5 cm. broad; surface dry or slightly viscid, subglabrous, latericious, bay on the umbo, usually smooth, varying at times to radiate-rimose and imbricate-squamulose except on the umbo; context with a farinaceous odor and taste; lamellae sinuate, usually with a decurrent tooth, ventricose, broad, not crowded, pale-rosy-isabelline, the edges often notched; spores globose, smooth, hyaline, with granular contents, 6–7 μ; stipe slender, equal or enlarged below, smooth, pale-rosy-isabelline, glabrous above, decorated below with scattered, latericious fibrils, fleshy, solid or hollow, 7–9 cm. long, 7–10 mm. thick.

Type collected in soil in woods at Glen Brook, Oregon, November 7, 1911, *W. A. Murrill 733*. Also collected in similar situations at Mill City, Oregon, November 9, 1911, *W. A. Murrill 810;* near Corvallis, Oregon, November 6–11, 1911, *W. A. Murrill 1002;* and near Searsville Lake, California, December 11, 1911, *James McMurphy 122*. This species suggests *T. pessundatum* in its coloring, but the stipe is much longer and the spores are wholly different.

Melanoleuca subvelata sp. nov.

Pileus convex-conic when young, not fully expanding, loosely clustered; surface smooth, glabrous, moist but not viscid, latericious, leaving a stain on paper, margin entire, strongly inflexed, concolorous or somewhat paler; lamellae sinuate-adnate to adnexed, not crowded, broad, ventricose, pallid; spores ovoid, smooth, hyaline, uninucleate, 5–7 $\times$ 2.5–4.5 μ; stipe subequal to slightly ventricose, rosy, smooth and glabrous at the apex, fibrillose-shaggy near the center, fleshy, solid, 7 cm. long, about 1 cm. thick; veil scanty, fibrillose, rosy, evanescent, persisting as fibrils on the margin and stipe.

Type collected among humus under a log in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 567*. This species has a slight, rosy, fibrillose veil in young stages.

Melanoleuca tenuipes sp. nov.

Pileus small, thin, convex, not expanding, becoming very slightly depressed at the center, 2 cm. broad; surface pallid, with a stramineous or avellaneous tint, smooth, glabrous, margin entire, concolorous, incurved; lamellae sinuate-adnexed, distant, broad, several times inserted, white, more or less notched on the edge; spores ellipsoid, smooth, hyaline, 5–7 × 3.5–4.5 μ; stipe slender, equal, solid, concolorous, white at the apex, smooth, dry, glabrous, 4 cm. long, 2 mm. thick.

Type collected on the ground in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 536*. Also collected in the same locality, *W. A. Murrill 301*.

NEW COMBINATIONS

MELANOLEUCA ANOMALA	= **Tricholoma anomalum**
MELANOLEUCA ARENICOLA	= **Tricholoma arenicola**
MELANOLEUCA AVELLANEA	= **Tricholoma avellaneum**
MELANOLEUCA AVELLANEIFOLIA	= **Tricholoma avellaneifolium**
MELANOLEUCA BICOLOR	= **Tricholoma bicolor**
MELANOLEUCA CALIFORNICA	= **Tricholoma californicum**
MELANOLEUCA COLLYBIIFORMIS	= **Tricholoma collybiiforme**
MELANOLEUCA DRYOPHILA	= **Tricholoma dryophilum**
MELANOLEUCA FARINACEA	= **Tricholoma farinaceum**
MELANOLEUCA HARPERI	= **Tricholoma Harperi**
MELANOLEUCA NUCIOLENS	= **Tricholoma nuciolens**
MELANOLEUCA OLESONII	= **Tricholoma Olesonii**
MELANOLEUCA OREADES	= **Tricholoma oreades**
MELANOLEUCA PINICOLA	= **Tricholoma pinicola**
MELANOLEUCA PLATYPHYLLA	= **Tricholoma platyphyllum**
MELANOLEUCA PORTOLENSIS	= **Tricholoma portolense**
MELANOLEUCA RUDERICOLA	= **Tricholoma rudericola**
MELANOLEUCA ROSEIBRUNNEA	= **Tricholoma roseibrunneum**
MELANOLEUCA SECEDIFOLIA	= **Tricholoma secedifolium**
MELANOLEUCA STRIATELLA	= **Tricholoma striatellum**
MELANOLEUCA SUBLURIDA	= **Tricholoma subluridum**
MELANOLEUCA SUBMULTICEPS	= **Tricholoma submulticeps**
MELANOLEUCA SUBPESSUNDATA	= **Tricholoma subpessundatum**
MELANOLEUCA SUBVELATA	= **Tricholoma subvelatum**
MELANOLEUCA TENUIPES	= **Tricholoma tenuipes**

NEW YORK BOTANICAL GARDEN.